

LOCTITE ECI 8001 E&C

August 2022

PRODUCT DESCRIPTION

LOCTITE ECI 8001 E&C provides the following product characteristics:

Technology	Thermoplastic
Appearance	Black paste
Filler Type	Carbon
Operating Temperature-, Maximum	60°C
Cure	Hot air drying or infrared
Application	Conductive Ink
Product Benefits	<ul style="list-style-type: none"> • Screen-printable • Flexible • Printable on most common substrates • Rapid heating with well-defined cut-off temperature, no external control devices needed • Self-regulation temperature around 55°C
Typical Assembly Applications	Self regulating heating elements
Key Substrates	PET, PEN, PI

LOCTITE ECI 8001 E&C is a Positive Temperature Coefficient (PTC) screen printable ink designed for applications where low voltage (< 50 V) self-regulating heaters are required. This material is formulated to rapidly heat to a specific threshold temperature and then maintain constant temperature for the device. The self-regulating temperature of the bare ink is around 55°C.

TYPICAL PROPERTIES OF UNDRIED MATERIAL

Solids Content (TGA, 1hour @ 150°C), %	50
Density, g/mL	1.0
Viscosity, Plate & Plate, mPa·s (cP):	
Plate 20mm @ Shear rate 15 s ⁻¹	6,500
Thixotropic Index (1.5/15 s ⁻¹)	6.0
Theoretical coverage, m ² /kg:	
@ 10 µm coating thickness	48
Shelf Life @ 8 to 28°C, days	180
Flash Point - See SDS	

TYPICAL DRYING PERFORMANCE

Recommended Drying Cycle

10 minutes @ 120°C

LOCTITE ECI 8001 E&C can be dried using forced air or infrared systems. Higher temperatures for longer time exposure will improve the performance. Care should be taken with infrared. Too much energy can destroy the coating.

Design drying rates for the maximum the substrate and production speeds can tolerate.

The above drying profile is a guideline recommendation. Conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer drying equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF DRIED MATERIAL

Physical Properties

Adhesion on PET, Cross Hatch, ASTM 3359, 5B grade

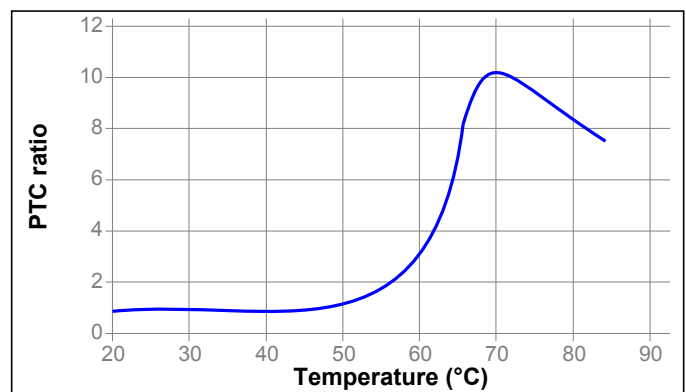
Electrical Properties

Sheet Resistance , 4-point probe, kOhm/sq/25µm:
10 minutes @ 120°C 1.7

PTC ratio > 7

Resistance vs. Temperature

PTC Ratio vs. Temperature curve of dried PTC-ink, measured on a test design. The PTC ratio is calculated by $PTC\ Ratio(T) = R(T)/R(25^{\circ}C)$



GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

DIRECTIONS FOR USE**1. Surface Preparation**

- Clean surface thoroughly prior to ink application.

2. Mixing/Dilution

- LOCTITE ECI 8001 E&C is supplied ready for use.
- Mix thoroughly before use to ensure it is homogenous.
- If needed, the ink can be diluted with Butyl glycol acetate.
- If needed, the resistance can be slightly increased by adding LOCTITE NCI 8002 E&C.

3. Application Details

Screen Type:

Polyester Screen, mesh/cm	54
Stainless Steel Screen, mesh/inch	200
Typical dry coating thickness, μm	17
Emulsion, Solvent resistant, μm	10 to 40
Squeegee Hardness	70 to 90

STORAGE

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 8 to 28°C. Storage below 8°C or above 28°C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Henkel Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{N/mm}^2 = \text{MPa}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Disclaimer

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